

Amendments to the Claims:

1. (previously canceled)
2. (previously canceled)
3. (previously canceled)
4. (previously amended) In a machine for conditioning crop materials, the improvement comprising:
 - a front pair of mutually oppositely rotatable, non-compressible surface rolls adapted to receive a stream of crop materials, condition the materials as they pass between the rolls, and feed the materials rearwardly,
 - each of said front rolls being provided with a set of generally radially outwardly projecting, elongated ribs extending generally helically lengthwise of the roll,
 - the ribs of one front roll being adapted to intermesh with the ribs of the other front roll;
 - a rear pair of mutually oppositely rotatable, compressible surface rolls disposed to receive crop materials from the front rolls and subject the crop to a further conditioning action,
 - each of said rear rolls being provided with a set of generally radially outwardly projecting, elongated bars extending generally helically lengthwise of the roll,
 - the bars of one rear roll being adapted to intermesh with the bars of the other rear roll,
 - the rolls of each pair of rolls being relatively movable toward and away from one another;
 - and
 - tension mechanism operably coupled with the front and rear pairs of rolls in a manner to resist said relative movement of the rolls of each pair away from one another,
 - said tension mechanism including hydraulic cylinders connected in a hydraulic circuit.

5. (original) In a machine as claimed in claim 4,
said hydraulic circuit including valving operable when closed to trap pressurized hydraulic
fluid within the cylinders.
6. (original) In a machine as claimed in claim 5,
said valving being operable when opened to allow charging of the hydraulic cylinders with
pressurized hydraulic fluid to a selected pressure level or discharging of hydraulic
fluid from the cylinders to a selected pressure level.
7. (original) In a machine as claimed in claim 5,
said hydraulic circuit further including a compressible gas accumulator connected in flow
communication with the hydraulic cylinders to provide a cushioning effect.
8. (previously amended) In a machine as claimed in claim 4,
the helical pattern of the ribs on the front rolls extending the full length of the front rolls,
the helical pattern of the bars on the rear rolls extending the full length of the rear rolls.
9. (previously canceled)
10. (previously canceled)

11. (previously amended) In a machine for conditioning crop materials, the improvement comprising:

a front pair of mutually oppositely rotatable, non-compressible surface rolls adapted to receive a stream of crop materials, condition the materials as they pass between the rolls, and feed the materials rearwardly,

each of said front rolls being provided with a set of generally radially outwardly projecting, elongated ribs extending generally helically lengthwise of the roll,

the ribs of one front roll being adapted to intermesh with the ribs of the other front roll;

a rear pair of mutually oppositely rotatable, compressible surface rolls disposed to receive crop materials from the front rolls and subject the crop to a further conditioning action,

each of said rear rolls being provided with a set of generally radially outwardly projecting, elongated bars extending generally helically lengthwise of the roll,

the bars of one rear roll being adapted to intermesh with the bars of the other rear roll,

the rolls of each pair of rolls being relatively movable toward and away from one another; and

tension mechanism operably coupled with the front and rear pairs of rolls in a manner to resist said relative movement of the rolls of each pair away from one another,

said front and rear pairs of rolls presenting a pair of upper rolls and a pair of lower rolls,

one of the upper rolls being fixed and the other upper roll being mounted for pivoting movement about the axis of rotation of the fixed upper roll,

one of the lower rolls being fixed and the other lower roll being mounted for pivoting movement about the axis of rotation of the fixed lower roll,

the movable upper roll being pivotal toward and away from the fixed lower roll, and the movable lower roll being pivotal toward and away from the fixed upper roll.

12. (original) In a machine as claimed in claim 11,
said tension mechanism including a pair of hydraulic cylinders operably coupled with
respective ones of the movable rolls,
each of said hydraulic cylinders being connected in a hydraulic circuit that includes valving
operable when closed to trap pressurized hydraulic fluid within a corresponding
cylinder,
said valving being operable when open to allow charging of the hydraulic cylinders with
pressurized hydraulic fluid to a selected pressure level or discharging of hydraulic
fluid from the cylinders to a selected pressure level,
each of said cylinders having its own valving operable independently of the valving for the
other cylinder.

13. (original) In a machine as claimed in claim 12,
each of said hydraulic cylinders having a compressible gas accumulator connected in fluid
flow communication with the cylinder to provide a cushioning effect for the cylinder.

14. (previously amended) In a machine as claimed in claim 11,
the helical pattern of the ribs on the front rolls extending the full length of the front rolls,
the helical pattern of the bars on the rear rolls extending the full length of the rear rolls.

15. (previously canceled)

16. (previously canceled)

17. (previously canceled)

18. (previously canceled)

19. (previously canceled)

20. (previously canceled)

21. (canceled)

22. (canceled)

23. (currently amended) [In a machine as claimed in claim 22,]

In a machine for conditioning crop materials, the improvement comprising:
at least one pair of oppositely rotatable rolls for acting upon a stream of crop materials
passing between the rolls,
said rolls being relatively movable toward and away from one another; and
hydraulic tension mechanism operably coupled with the rolls without springs for supplying
a tension force resisting movement of the rolls away from one another,
said tension mechanism including a hydraulic cylinder connected in a hydraulic circuit,
said hydraulic circuit including valving operable when closed to trap pressurized hydraulic
fluid within the cylinder,
said valving being operable when opened to allow charging of the hydraulic cylinders with
pressurized hydraulic fluid to a selected pressure level or discharging of hydraulic
fluid from the cylinder to a selected pressure level,
said hydraulic circuit further including a compressible gas accumulator connected in flow
communication with the hydraulic cylinder to provide a cushioning effect,
further comprising a second pair of oppositely rotatable rolls movable relatively toward and
away from one another and disposed to receive crop materials from the first-
mentioned pair of rolls for acting upon such materials as they pass between the
second pair of rolls,

said tension mechanism being operably coupled with said second pair of rolls for resisting
movement of the second pair of rolls relatively away from one another,
said tension mechanism including a second hydraulic cylinder coupled without springs with
said second pair of rolls,
said first-mentioned hydraulic cylinder and said second hydraulic cylinder each having
valving adapted to trap pressurized fluid in the cylinders,
said valving being operable to permit fluid to be trapped in the first-mentioned cylinder at
a different pressure level than fluid trapped in said second cylinder,
said first-mentioned rolls comprising a pair of non-compressible surface rolls, each having
a set of generally radially outwardly projecting ribs that extend generally helically
along the length of the roll,
said second rolls comprising a pair of compressible surface rolls, each having a set of
generally radially outwardly projecting bars that extend generally helically along the
length of the roll.

24. (canceled)

25. (previously amended) In a machine as claimed in claim 23,
the helical pattern of the ribs on the front rolls extending the full length of the front rolls,
the helical pattern of the bars on the rear rolls extending the full length of the rear rolls.

26. (previously amended) A method of conditioning crop materials comprising the steps of:

presenting crop materials to a front pair of oppositely rotating, non-compressible surface rolls having intermeshing ribs that extend generally helically lengthwise of the rolls; passing the crop materials between the front rolls while the rolls are under tension to condition the materials;

presenting the conditioned materials from the front rolls to a rear pair of oppositely rotating, compressible surface rolls immediately behind the front rolls, said rear rolls having intermeshing bars that extend generally helically lengthwise of the rear rolls; and

passing the conditioned crop materials between the rear rolls while the rear rolls are under tension to subject the conditioned materials to a further conditioning action, wherein the tension force is applied hydraulically to the front rolls and the rear rolls.

27. (previously amended) A method of conditioning crop materials comprising the steps of:

presenting crop materials to a front pair of oppositely rotating, non-compressible surface rolls having intermeshing ribs that extend generally helically lengthwise of the rolls; passing the crop materials between the front rolls while the rolls are under tension to condition the materials;

presenting the conditioned materials from the front rolls to a rear pair of oppositely rotating, compressible surface rolls immediately behind the front rolls, said rear rolls having intermeshing bars that extend generally helically lengthwise of the rear rolls; and

passing the conditioned crop materials between the rear rolls while the rear rolls are under tension to subject the conditioned materials to a further conditioning action,

further comprising the step of adjusting the tension on the front rolls independently of the tension on the rear rolls.

28. (previously amended) A method of conditioning crop materials comprising the steps of:

presenting crop materials to a front pair of oppositely rotating, non-compressible surface rolls having intermeshing ribs that extend generally helically lengthwise of the rolls; passing the crop materials between the front rolls while the rolls are under tension to condition the materials;

presenting the conditioned materials from the front rolls to a rear pair of oppositely rotating, compressible surface rolls immediately behind the front rolls, said rear rolls having intermeshing bars that extend generally helically lengthwise of the rear rolls; and

passing the conditioned crop materials between the rear rolls while the rear rolls are under tension to subject the conditioned materials to a further conditioning action, further comprising the step of adjusting spacing between the front rolls independently of adjusting spacing between the rear rolls.

29. (previously amended) In a method as claimed in claim 26, the helical pattern of the ribs on the front rolls extending the full length of the front rolls, the helical pattern of the bars on the rear rolls extending the full length of the rear rolls.

30. (previously amended) In a method as claimed in claim 27, the helical pattern of the ribs on the front rolls extending the full length of the front rolls, the helical pattern of the bars on the rear rolls extending the full length of the rear rolls.

31. (previously amended) In a method as claimed in claim 28,
the helical pattern of the ribs on the front rolls extending the full length of the front rolls,
the helical pattern of the bars on the rear rolls extending the full length of the rear rolls.